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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,368	10/31/2003	Marcel-Catalin Rosu	YOR920030508US1	3047

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EXAMINER

DUNN, DARRIN D

ART UNIT	PAPER NUMBER
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2121

MAIL DATE	DELIVERY MODE
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08/03/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/699,368	Applicant(s) ROSU ET AL.	
	Examiner DARRIN DUNN	Art Unit 2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 April 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-13, 15, 16 and 39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-13, 15-16, and 39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The Office Action is responsive to the communication filed on 04/28/2009.
2. Claims 1-5, 7-13, 15-16, and 39 are pending.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1-5, 7-13, and 15-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boivie (USPN 6415312) in view over Wu (USPN 6601208), and in further view over Boivie et al. (USPN 6625773)

6. As per claims 1, Boivie teaches a method for distributing content from a server to a plurality of receivers wherein said content is packetized into one or more packets, comprising:

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establishing a multicast distribution tree rooted at a the server([FIG 1- element 12], [COL 4 lines 59-60]); and directing, by the server, the transmission of each of the one or more packets along at least a portion of the multicast distribution tree ([COL 3 lines 1-10]), the at least a portion of the multicast distribution tree comprising one or more intermediate receivers through which the each of the one or more packets must travel to reach the plurality of receivers ([COL 4 lines 34-45]. [COL 3 lines 44-46], [FIG 1- elements R1, R2, nodes),

wherein the sender defines a different set of the one or more intermediate receivers for each of said one or more packets ([COL 4 lines 30-55])

However, Boivie et al. '312 does not teach wherein the server selects all of the one or more intermediate receivers in the at least a portion of the multicast distribution tree. Boivie et al. '773 teaches wherein the server (e.g., <src> = A ([COL 5 lines 18-30], [COL 3 lines 37-40], [COL 4 lines 9-14])) selects all of the one ore more intermediate receivers (e.g., R1 [COL 3 lines 23-26], [COL 4 lines 36-40]) in the least as portion of the multicast distribution tree ([Figure 1]). Boivie et al. further teaches directing, by a servers, the transmission of one or more packets ([COL 4 lines 9-14] e.g., list of destinations)

Therefore, at the time the invention was made, one of ordinary skill in the art would maintain enable the server (e.g., <src>) to maintain a list of eligible receivers (e.g., R1) such the server may selectively choose a receiver or receivers from which a packet is to be routed. The motivation is to select a receiver from which a packet is to be routed.

However, Boivie does not teach wherein at least some of the one or more packets are encoded with forward error correction coding. Wu teaches forward error correction techniques

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such that encoding methods are performed for transmitting and receiving ends as to provide optimal transmission results. ([ABSTRACT])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to modify Boivie to utilize forward error correction (e.g., a known advantage is that retransmission is unnecessary) opposed to CRC as a means of optimizing transmission. Boivie teaches the use of CRC in a multi-cast distribution of content. Wu teaches the use of forward error correction in multicasting ([COL 8 lines 60-65]). Since forward error correction provides benefits such as bandwidth conservation, message delay reduction, reliability improvement, and transmission speed increases, it would have been obvious to use forward error correction.

7. As per claims 2 and 11, Boivie teaches the method of claim 1, wherein the step of directing the transmission further comprises:

encoding the each of the one or more packets with the at least a portion of said multicast distribution tree ([COL 3 lines 1-20]), wherein the multicast distribution tree identifies at least one of the plurality of receivers to which the each of the one or more packets is to be delivered ([COL 3 lines 1-10],, [COL 3 lines 44-46],[COL 4 lines 34-58]) and a path along which the each of the one or more packets is to travel to the at least one of the plurality of receivers ([COL 3 lines 30-35])

8. As per claims 3 and 39, Boivie et al. teaches the method of claim 2, wherein the multicast distribution tree is defined by the server ([COL 4 lines 34-40], [COL 4 lines 59-60] e.g., server, i.e., A, maintains the following routes , R1 R2 D | R1 B | R1 R2 C). The term, defined, does not illustrate how the tree is defined by the server. Since a source selects from

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available routers for the purpose of multicasting, it is interpreted that the source node is defining branches of the tree (e.g., R1 , R2, etc) in order to route a packet)

9. As per claims 4 and 12, Boivie teaches the method of claim 1, wherein the step of directing the transmission comprises:

sending one of said one or more packets to a first group of the one or more intermediate receivers ([CO 3 lines 44-46]); creating at least one copy. of the one of said one or more packets packet by at least one of said first group of the one or more intermediate receivers ([COL 3 lines 65-67]); and forwarding at least one copy of the one of said one or more packets to at least one receiver in a second group of the one or more intermediate receivers within said multicast distribution tree ([COL 3 lines 65-67], [COL 4 lines 1-3] e.g. packet forwarding is applicable to intermediate and destination nodes)

10. As per claims 5 and 13 Boivie teaches the method of claim 1, wherein each of the plurality of receivers that is not a final destination for said one or more packets copies and forwards said each of the one or more packets to a subsequent one of the plurality of receivers receiver in accordance with said at least a portion of the multicast distribution tree ([COL 3 lines 44-47])

11. As per claims 7 and 15Boivie teaches the method of claim 4, wherein transmissions from the sender to each of the plurality of receivers and between two of the plurality of receivers are individually accomplished using unicast distribution communication ([COL 3 lines 47-51])

12. As per claims 8 and 16, Boivie teaches the method of claim 1, wherein the step of establishing a multicast distribution tree comprises:

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adjusting a structure of the multicast distribution tree to address a given metric, wherein said metric is at least one of cost, delay, bandwidth, latency or reliability ([COL 7 lines 15-30]).

13. As per claim 9, Boivie teaches a method for distributing content from a servers to a plurality of receivers, wherein said content is packetized into at least one packet, comprising: establishing a multicast distribution tree rooted at the server ([COL 4 lines 59-60], [Figure 1] e.g., A (e.g., servers) is the root of the multicast tree); and directing, by the server ([COL 4 lines 30-40]) the transmission of the at least one packet along at least a portion of the multicast distribution tree ([COL 3 lines 1-10]), the at least a portion of the multicast distribution tree comprising one or more intermediate receivers through which the at least one packet must travel to reach the plurality of receivers ([COL 4 lines 34-45]. [COL 3 lines 44-46],

wherein the plurality of receivers and the one ore more intermediate receivers are defined by the server ([COL 4 lines 35-47] e.g., server (e.g., A) defines a list of routes to destinations B,C, and D. A plurality of receivers, i.e., R1 and R1, are defined as a route by the server A.

However, Boivie et al' 312 does not teach one or more intermediate receivers. Boivie et al. '773 teaches a plurality of intermediate receivers, R3 or R7 ([Figure 1])

Therefore, at the time the invention was made, one of ordinary skill in the art would have motivation to include more than two receivers as to enable one to select intermediate receivers that may further define a route selected by a source node from which to route packets to a destination.

However, Boivie et al. '312 does not teach wherein the server selects all of the one or more intermediate receivers in the at least a portion of the multicast distribution tree. Boivie et al. '773 teaches wherein the server (e.g., <src> = A ([COL 5 lines 18-30], [COL 3 lines 37-40],

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[COL 4 lines 9-14])) selects all of the one or more intermediate receivers (e.g., R1 [COL 3 lines 23-26], [COL 4 lines 36-40]) in the least as portion of the multicast distribution tree ([Figure 1]).

Boivie et al. further teaches directing, by a servers, the transmission of one or more packets ([COL 4 lines 9-14] e.g., list of destinations)

Therefore, at the time the invention was made, one of ordinary skill in the art would maintain enable the server (e.g., <src>) to maintain a list of eligible receivers (e.g., R1) such the server may selectively choose a receiver or receivers from which a packet is to be routed. The motivation is to select a receiver from which a packet is to be routed.

wherein the plurality of receivers and the one or more intermediate receivers are defined by the server (

14. As per claim 10, Boivie teaches the method of claim 9, wherein the one or more intermediate receivers is different for each of the at least one packet ([COL 3 lines 44-46], [COL 4 lines 34-59])

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DARRIN DUNN whose telephone number is (571)270-1645.

The examiner can normally be reached on EST:M-R(8:00-5:00) 9/5/4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert DeCady can be reached on (571) 272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/DD/
07/24/09

/Albert DeCady/
Supervisory Patent Examiner
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